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7 GOOGLE LLC,  
8 Plaintiff,  
9 v.  
10 ECOFACTOR, INC.,  
11 Defendant.

Case No. 21-cv-03220-HSG

**ORDER DENYING MOTION FOR  
JUDGMENT ON THE PLEADINGS**

Re: Dkt. No. 41

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13 Plaintiff Google LLC seeks judgment on the pleadings that Defendant EcoFactor, Inc.'s  
14 patents-in-suit are invalid under 35 U.S.C. § 101. For the reasons explained below, the Court  
15 denies the motion.

16 **I. BACKGROUND**

17 Google is a technology company based in Mountain View, California. Its stated mission is  
18 to organize the world's information to make it universally accessible and useful. EcoFactor is a  
19 private company based in Palo Alto, California. Beginning in 2019, EcoFactor filed actions in the  
20 District of Massachusetts, the Western District of Texas, and the International Trade Commission  
21 accusing Google's Nest thermostat products of patent infringement.

22 In June 2021, Google filed this action seeking a declaratory judgment of non-infringement  
23 of four EcoFactor patents, U.S. Patent Nos. 8,751,186 (the "186 Patent"), 8,740,100 (the "100  
24 Patent"), 9,194,597 (the "597 Patent") and 10,584,890 (the "890 Patent"). *See* Dkt. No. 1. The  
25 following month, EcoFactor filed an answer to Google's complaint as well as a counterclaim  
26 accusing Google's Nest thermostats of infringing the patents-in-suit. *See* Dkt. No. 17. Google  
27 now moves for judgment on the pleadings. *See* Dkt. No. 41 ("Mot."), 48 ("Opp."), and 49  
28 ("Reply"). The Court heard oral argument on the motion on April 28, 2022. *See* Dkt. No. 83.

**II. LEGAL STANDARD**

Under Federal Rule of Civil Procedure 12(c), a party may move for judgment on the pleadings “[a]fter the pleadings are closed—but early enough not to delay trial.” “Judgment on the pleadings is proper when, taking all allegations in the pleading as true, the moving party is entitled to judgment as a matter of law.” *Stanley v. Trustees of Cal. State Univ.*, 433 F.3d 1129, 1133 (9th Cir. 2006). “Rule 12(c) is functionally identical to Rule 12(b)(6) and . . . the same standard of review applies to motions brought under either rule.” *Cafasso, U.S. ex rel. v. Gen. Dynamics C4 Sys., Inc.*, 637 F.3d 1047, 1054 n.4 (9th Cir. 2011) (quotation omitted). The Court will “accept factual allegations in the complaint as true and construe the pleadings in the light most favorable to the nonmoving party.” *Manzarek v. St. Paul Fire & Marine Ins. Co.*, 519 F.3d 1025, 1031 (9th Cir. 2008).

Section 101 of the Patent Act describes the scope of patentable subject matter as encompassing “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.” 35 U.S.C. § 101. It is well settled that laws of nature, natural phenomena, and abstract ideas are excluded from the universe of patentable subject matter. *See Alice Corp. Pty. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014). These categories are not patent-eligible because “they are the basic tools of scientific and technological work,” which are “free to all men and reserved exclusively to none.” *Mayo Collaborative Servs. v. Prometheus Labs.*, 566 U.S. 66, 71 (2012) (citations omitted). Allowing patent claims for laws of nature, natural phenomena, and abstract ideas would “tend to impede innovation more than it would tend to promote it,” thereby thwarting the primary object of the patent laws. *Id.* However, the Supreme Court has also recognized the need to “tread carefully in construing this exclusionary principle lest it swallow all of patent law.” *Alice*, 573 U.S. at 217.

The Supreme Court and Federal Circuit have articulated a two-part test for determining whether a claim’s subject matter is patent-eligible. First, a court “determine[s] whether a claim is ‘directed to’ a patent-ineligible abstract idea.” *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat. Ass'n*, 776 F.3d 1343, 1346-47 (Fed. Cir. 2014) (citing *Mayo*, 566 U.S. at 75-76). If so, the Court then “consider[s] the elements of the claim—both individually and as an

1 ordered combination—to assess whether the additional elements transform the nature of the claim  
2 into a patent-eligible application of the abstract idea.” *Id.* at 1347. “This is the search for an  
3 ‘inventive concept’—something sufficient to ensure that the claim amounts to ‘significantly more’  
4 than the abstract idea itself.” *Id.* (quoting *Mayo*, 566 U.S. at 72-73).

5 To determine whether the “claim’s character as a whole is directed to excluded subject  
6 matter” the Court evaluates the claimed “advance” over the prior art. *Intellectual Ventures I LLC*  
7 v. *Erie Indem. Co.*, 850 F.3d 1315, 1325 (Fed. Cir. 2017) (quotation omitted). “At *Alice* step one,  
8 ‘it is not enough to merely identify a patent-ineligible concept underlying the claim; [the court]  
9 must determine whether that patent-ineligible concept is what the claim is ‘directed to.’’’’ *Data*  
10 *Engine Techs. LLC v. Google LLC*, 906 F.3d 999, 1011 (Fed. Cir. 2018) (quoting *Rapid Litig.*  
11 *Mgmt. Ltd. v. CellzDirect, Inc.*, 827 F.3d 1042, 1050 (Fed. Cir. 2016))). The Court must “examine  
12 earlier cases in which a similar or parallel descriptive nature can be seen—what prior cases were  
13 about, and which way they were decided.” *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d  
14 1288, 1294 (Fed. Cir. 2016). Finally, in *Aatrix Software, Inc. v. Green Shades Software, Inc.*, the  
15 Federal Circuit emphasized that the question of eligibility may be determined at the pleadings  
16 stage “only when there are no factual allegations that, taken as true, prevent resolving the  
17 eligibility question as a matter of law.” 882 F.3d 1121, 1125 (Fed. Cir. 2018).

### 18 III. ANALYSIS

19 Google moves for judgment on the pleadings under Rule 12(c), arguing that the four  
20 patents-in-suit are directed to abstract ideas and fail to assert any inventive concept to transform  
21 the nature of the claims into a patent-eligible application of the abstract idea. The Court proceeds  
22 under the two-part test outlined in *Alice*.<sup>1</sup>

23 \_\_\_\_\_  
24 <sup>1</sup> EcoFactor makes a perfunctory argument that claim construction is necessary before the Court can  
25 consider issues of invalidity. Opp. at 24-25. While claim construction is often helpful, and  
26 sometimes necessary, to resolve whether a claim is directed to patent-eligible subject matter, it “is  
27 not an inviolable prerequisite to a validity determination under § 101.” *Bancorp Servs., L.L.C. v.*  
28 *Sun Life Assur. Co. of Canada (U.S.)*, 687 F.3d 1266, 1273 (Fed. Cir. 2012). EcoFactor has neither  
explained how any particular construction would alter the section 101 analysis, nor proposed any  
constructions that the Court should credit given the posture of this motion. In line with the Federal  
Circuit and several other courts in this district, the Court finds that this motion can be resolved on  
the pleadings prior to claim construction on this record. See *Content Extraction*, 776 F.3d at 1349  
(affirming grant of motion to dismiss prior to claim construction); see also *OpenTV, Inc. v. Apple*,

1           **A. The '186 Patent**

2           The '186 patent is titled “System and method for calculating the thermal mass of a  
3 building.” *See* '186 patent. The '186 patent claims “a system for calculating a value for the  
4 effective thermal mass of a building.” *Id.* at Abstract. Claim 1 recites the following system claim:

5           1. A system for controlling a heating, ventilation and air conditioning  
6 (HVAC) system comprising:

7                 one or more server computers comprising computer hardware,  
8 the one or more server computers configured to receive inside  
9 temperature measurements from at least a first location  
10 conditioned by at least one HVAC system;

11                 one or more databases that store the inside temperature  
12 measurements over time, the one or more databases accesses  
13 by the one or more server computers;

14                 wherein the one or more server computers are located  
15 remotely from the first location, the one or more server  
16 computers configured to receive outside temperature  
17 measurements from at least one source other than the HVAC  
18 system,

19                 wherein the one or more server computers are configured to  
20 calculate one or more predicted rates of change in temperature  
at the first location based on status of the HVAC system, and  
based on the outside temperature measurements, wherein the  
one or more predicted rates of change predict a speed a  
temperature inside the first location will change in response to  
changes in outside temperature; and

21                 wherein the one or more server computers are further  
22 configured to determine whether to direct the HVAC control  
23 system to pre-cool the first structure based on the one or more  
24 predicted rates of change prior to directing the HVAC control  
25 system to reduce electricity demand.

26           '186 patent at 13:31-57. The '186 patent’s other independent claim, Claim 8, discloses a method  
27 reciting a similar invention. *Id.* at 14:19-39. The parties agree that claim 1 of the '186 patent is  
28 representative of the '186 patent for purposes of the Court’s § 101 analysis. *See Berkheimer v. HP Inc.*, 881 F.3d 1360, 1365 (Fed. Cir. 2018) (“Courts may treat a claim as representative in certain  
situations, such as if the patentee does not present any meaningful argument for the distinctive  
significance of any claim limitations not found in the representative claim or if the parties agree to

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29           <sup>Inc., No. 14-CV-01622-HSG, 2015 WL 1535328, at \*2 (N.D. Cal. Apr. 6, 2015) (collecting cases).</sup>

1 treat a claim as representative.”).

2 Google argues that claim 1 of the ’186 patent is analogous to the patents found ineligible in  
3 *ChargePoint, Inc. v. SemaConnect, Inc.*, 920 F.3d 759, 766 (Fed. Cir. 2019). The Court disagrees.  
4 The patents in *ChargePoint* claimed network-connected charging stations for electric vehicles.  
5 The patents’ specification detailed the prior art’s lack of network communication that would allow  
6 efficient interaction with respect to electrical needs, and the claimed solution enabled such  
7 communication. Noting the breadth of the claims and the fact that the specification never  
8 indicated that charging stations were improved from a technical perspective, the Federal Circuit  
9 held that these asserted claims were directed to the “abstract idea of network communication for  
10 device interaction.” *Id.* at 768. The court concluded that “the inventors here had the good idea to  
11 add networking capabilities to existing charging stations to facilitate various business interactions.  
12 But that is where they stopped, and that is all they patented.” *Id.* at 770.

13 By contrast, claim 1 of the ’186 patent recites a device that receives and stores inside  
14 temperature measurements, calculates a predicted rate of change based on the stored temperature,  
15 status of the HVAC system, and outside temperature (the ’186 patent describes this analysis as  
16 calculating “thermal mass”), then determines whether to direct the HVAC to pre-cool the structure  
17 before the HVAC reduces electricity. The Court finds that claim 1 is more analogous to the claims  
18 deemed eligible in *Koninklijke KPN N.V. v. Gemalto M2M GmbH*, 942 F.3d 1143, 1149 (Fed. Cir.  
19 2019) and *CardioNet, LLC v. InfoBionic, Inc.* 955 F.3d 1358, 1368 (Fed. Cir. 2020), *cert. denied*  
20 *sub nom. InfoBionic, Inc. v. Cardionet, LLC*, 141 S. Ct. 1266 (2021). In both cases, the Federal  
21 Circuit held that the asserted claims were directed to specific implementations of improved  
22 devices and systems and not abstract ideas that used computers as tools. *See Koninklijke KPN*  
23 *N.V.*, 942 F.3d at 1150 (“[W]e conclude that appealed claims 2–4 of the ’662 patent are patent-  
24 eligible because they are directed to a non-abstract improvement in an existing technological  
25 process (*i.e.*, error checking in data transmissions.”); *CardioNet*, 955 F.3d at 1368 (“[W]e  
26 conclude that claim 1 of the ’207 patent is directed to an improved cardiac monitoring device and  
27 not to an abstract idea.”). Similarly, claim 1 of the ’186 patent is directed to the non-abstract  
28 improvement of using thermal mass calculations and predicted rate of change in the technological

1 process of directing programmable HVAC thermostats, not an abstract result that merely invokes  
2 generic processes or machinery.

3 The written description of the '186 patent supports this reading of claim 1. *See*  
4 *ChargePoint*, 920 F.3d at 767 (“The ‘directed to’ inquiry may also involve looking to the  
5 specification to understand ‘the problem facing the inventor’ and, ultimately, what the patent  
6 describes as the invention.” (citation omitted)). As the specification explains, thermostats at the  
7 time were unable to receive more than two variables and had a limited user interface, making it  
8 less likely a user would control or re-program the thermostat to their preferences. *See* '186 patent  
9 at 1:46-60. This often diminished the energy savings attainable through the use of programmable  
10 thermostats. *Id.* at 1:56-60. Accordingly, the '186 patent provides a specific solution because it is  
11 directed to a non-abstract improvement in an existing technological process (*i.e.*, pre-cooling an  
12 HVAC system). By requiring the determination of whether to direct the HVAC control system to  
13 pre-cool the structure based on thermal mass calculation, claim 1 recites a specific implementation  
14 of pre-cooling that improves the operation of the technological HVAC system process.

15 Google also contends that the '186 patent fails because it does not specify *how* the claimed  
16 improvement is implemented. But this requirement was rejected by the Federal Circuit in  
17 *Koninklijke KPN N.V.*, 942 F.3d at 1151 (“A claim that is directed to improving the functionality  
18 of one tool (e.g., error checking device) that is part of an existing system (e.g., data transmission  
19 error detection system) does not necessarily need to recite how that tool is applied in the overall  
20 system (e.g., perform error detection) in order to constitute a technological improvement that is  
21 patent-eligible.”). Rather, “the more relevant inquiry is ‘whether the claims in th[is] patent[ ]  
22 focus on a specific means or method that improves the relevant technology or are instead directed  
23 to a result or effect that itself is the abstract idea and merely invoke processes and machinery.’”  
24 *Id.* (quoting *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1314 (Fed. Cir. 2016)).  
25 Here, claim 1 of the '186 patent focuses on a specific method – the use of calculated thermal mass  
26 – to improve the function of the HVAC thermostat. It is not directed to a result or effect that is the  
27 abstract idea itself.

28 Accordingly, the Court concludes that the '186 patent is not directed to an abstract idea at

1 step one. Thus, the Court need not reach *Alice* step two. *See Core Wireless Licensing S.A.R.L. v.*  
2 *LG Elecs., Inc.*, 880 F.3d 1356, 1363 (Fed. Cir. 2018) (“Because we hold that the asserted claims  
3 are not directed to an abstract idea, we do not proceed to the second step of the inquiry.”).

4 **B. The '100 Patent**

5 The '100 patent is titled “System, method and apparatus for dynamically variable  
6 compressor delay in thermostat to reduce energy consumption.” *See* '100 patent. It claims  
7 systems and methods “for reducing the usage of a ventilation system.” *Id.* at Abstract. Claim 1  
8 recites the following system claim:

9 1. A system for reducing the usage of a ventilation system comprising:

10 a thermostatic controller having at least two settings for a  
11 delay enforced by said thermostatic controller after said  
12 thermostatic controller turns said ventilation system off prior  
13 to allowing said thermostatic controller to signal said  
14 ventilation system to turn on again, one setting being for a first  
15 interval, and at least a second setting for a second interval that  
16 is longer than said first interval; and

17 a computer processor in communication with said  
18 thermostatic controller, the processor configured to:

19 access stored data comprising a plurality of internal  
20 temperature measurements taken within a structure  
21 and a plurality of outside temperature measurements  
22 relating to temperatures outside the structure;

23 use the stored data to predict a rate of change of  
24 temperatures inside the structure in response to at least  
25 changes in outside temperatures; and

26 evaluate one or more parameters including at least the  
27 outside temperature measurements and the predicted  
rate of change, and to determine whether to adopt said  
first interval or said second interval based upon the  
values of said parameters.

28 *Id.* at 9:61-10:17. The '100 patent's other independent claim, Claim 9, is a method claim reciting  
a similar invention. *Id.* at 10:36-61. The parties agree that claim 1 of the '100 patent is  
representative of the '100 patent for purposes of the Court's § 101 analysis. *See Berkheimer*, 881  
F.3d at 1365.

29 Google argues that the '100 patent is patent-ineligible because it is directed to “the abstract  
30 idea of using temperature data to determine when an HVAC system should turn on,” a “basic

1 concept” that “humans have performed . . . since people first began using fire to heat their homes.”  
2 Mot. at 16. However, this characterization oversimplifies the claimed invention. *See McRO*, 837  
3 F.3d at 1313; *see also Data Engine*, 906 F.3d at 1011 (explaining that “[i]t is not enough . . . to  
4 merely trace the invention to some real-world analogy,” because “[t]he question of abstraction is  
5 whether the claim is ‘directed to’ the abstract idea itself.”). The Court concludes that the ’100  
6 patent is more appropriately described as directed to the specific invention of a HVAC system  
7 with a computer processor that selects from multiple compressor delays based on a set of  
8 parameters like user preferences. And the Court accordingly finds that claim 1 “focus[es] on a  
9 specific means or method that improves” HVAC system technology and is not “directed to a result  
10 or effect that itself is the abstract idea and merely invoke generic processes and machinery.”  
11 *CardioNet*, 955 F.3d at 1368 (quoting *McRO*, 837 F.3d at 1314).

12 In particular, the language of claim 1 recites an HVAC system that uses a computer  
13 processor to predict a rate of change of inside temperatures, then uses those predictions along with  
14 other parameters to select a compressor delay for the operation of the HVAC system. Thus, the  
15 Court concludes that this claim is patent eligible because, like the claims deemed eligible in  
16 *Koninklijke KPN N.V.*, 942 F.3d at 1149 and *CardioNet*, 955 F.3d at 1368, it is directed to a  
17 specific implementation of a system improvement.

18 Google contends that “having multiple compressor delays or adjustable compressor delays  
19 was not a new concept [in the prior art].” Reply at 11 (citing ’100 patent at 2:25-40 (explaining  
20 that existing programmable thermostats could adjust compressor delay through mechanical  
21 switches)). Google’s argument is correct as far as it goes. But as the ’100 patent written  
22 description explains, many existing HVAC systems could not easily adjust the compressor delay  
23 for the system. Instead, “[c]hanging the compressor delay generally require[d] disassembling the  
24 thermostat.” *Id.* at 2:32-40. Simply claiming an invention that uses a generic processor to select  
25 from multiple compressor delays would not survive *Alice* step one because the “mere automation  
26 of manual processes using generic computers does not constitute a patentable improvement in  
27 computer technology.” *Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044, 1055 (Fed.  
28 Cir. 2017). However, the ’100 patent claims an improvement beyond the use of a generic

1 computer and processor. It focuses on a specific method of improving HVAC system operation  
2 by selecting an appropriate compressor delay based on user parameters and other calculations.<sup>2</sup> In  
3 other words, while the benefits of varying compressor delay were already known in the prior art,  
4 the '100 patent claims an improvement over the prior art because it allows the HVAC system to  
5 better accommodate certain parameters by varying compressor delay. A review of the  
6 specification as a whole makes clear that the '100 patent is not directed to the ineligible idea of  
7 merely selecting from multiple compressor delays but rather to the specific improvement of using  
8 user preferences and rate of change predictions to make the selection. This provides the  
9 technological benefit of “offer[ing] a simple way to create asymmetrical thermal waveforms  
10 without the need for highly detailed programming.” '100 patent at 3:29-34.

11 Thus, the '100 patent discloses the specific method of a networked HVAC system that  
12 selects from compressor delay variables based on certain parameters to improve the operation in  
13 thermostats. On this basis, the Court concludes that the '100 patent is not directed to an abstract  
14 idea at *Alice* step one and the Court need not reach *Alice* step two. *See Core Wireless Licensing*,  
15 880 F.3d at 1363.

16 **C. The '597 Patent**

17 The '597 patent is titled “System, method and apparatus for identifying manual inputs to  
18 and adaptive programming of a thermostat.” *See '597 patent*. It claims systems and methods “for  
19 incorporating manual changes to the setpoint for a thermostatic controller into long-term  
20 programming of the thermostatic controller.” *Id.* at Abstract. The '597 patent contains three  
21 independent claims, 1, 9, and 17. Because the parties have not designated a representative claim,  
22 the Court will analyze each claim separately. *See Berkheimer*, 881 F.3d at 1365.

23 Google argues that all claims of the '597 patent are directed to the abstract idea of “using  
24 temperature data to detect a manual change in a thermostat’s temperature setting.” Mot. at 18.  
25 Google characterizes the claims of the '597 patent as “recit[ing] conventional computer functions

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27 <sup>2</sup> The '100 patent written description explains that these parameters “may include user preferences,  
28 such as the weather, time of day and other conditions under which the homeowner has elected to  
permit hysteresis band changes, the maximum length of compressor delay authorized, etc.” '100  
patent at 8:51-57.

1 for generic data collection, analysis, and storage to . . . ‘detect[] a manual change’ to a  
2 [temperature] setpoint.” *Id.* at 21. EcoFactor responds that the ’597 patent recites an HVAC  
3 control “that uses stored predicted rates of change in inside temperature to calculate scheduled  
4 programming comprising automated setpoints that also compares actual setpoints with one or  
5 more automated setpoints in order to determine whether the actual or automated setpoints are the  
6 same or different based on a difference value.” Opp. at 16.

7 **i. Claim 1 of the ’597 Patent**

8 The first claim of the ’597 patent recites the following method:

9 1. A method for detecting manual changes to the setpoint for a  
10 thermostatic controller comprising:

11 providing a thermostatic controller operatively connected to a  
12 heating ventilation and air conditioning system, the  
13 temperature set point of the heating ventilation and air  
14 conditioning system being manually changeable;

15 accessing stored data comprising a plurality of internal  
16 temperature measurements taken within a structure and a  
17 plurality of outside temperature measurements;

18 using the stored data to predict changes in temperature inside  
19 the structure in response to at least changes in outside  
20 temperatures;

21 calculating with at least one computer, scheduled  
22 programming of the thermostatic controller for one or more  
23 times to control the heating ventilation and air conditioning  
24 system, the scheduled programming comprising at least a first  
25 automated setpoint at a first time;

26 recording, with the thermostatic controller, actual setpoints of  
27 the heating ventilation and air condition system;

28 communicating the actual setpoints from the one or more  
thermostatic controllers to the at least one computer;

generating with the at least one computer, a difference value  
based on comparing at least one of the an actual setpoints at  
the first time for the thermostatic controller to the first  
automated setpoint for the thermostatic controller;

detecting a manual change to the first automated setpoint by  
determining whether the at least one of the actual setpoints  
and the first automated setpoint are the same or different based  
on the difference value; and

logging the manual change to a database.

1       *Id.* at 8:8-38.

2                  The Court concludes that claim 1 of the '597 patent is directed to the patent-eligible idea of  
3 detecting and logging manual changes made to a HVAC system and, using that stored information  
4 along with predictions of temperature changes based on outside and inside temperatures, adjusting  
5 the HVAC system's setpoints. This is a non-abstract improvement to the existing technological  
6 process of an HVAC system. By requiring the logging of manual changes in a database, claim 1  
7 recites a specific implementation that varies the way the HVAC system functions by improving its  
8 ability to consider outside weather conditions and the thermal characteristics of individual homes.  
9 This improvement allows the HVAC system to "dynamically achieve the best possible balance  
10 between comfort and energy savings." '597 patent at 2:12-17.

11                 Claim 1 does not specify how the logged manual changes are applied by the overall HVAC  
12 system to achieve a technological improvement. But as noted above, *see supra* Section III.A,  
13 under *Koninklijke KPN N.V.*, the Federal Circuit does not require a patent claim recite a "last step  
14 tying the claims to a 'concrete application'" to survive at *Alice* step one. 942 F.3d at 1151. The  
15 Court concludes that the claim focuses on the specific use of manual changes and internal  
16 temperature rate of change predictions to improve adjustments to an HVAC system's automated  
17 setpoint. *See id.* ("[T]he more relevant inquiry is 'whether the claims in th[is] patent[ ] focus on a  
18 specific means or method that improves the relevant technology or are instead directed to a result  
19 or effect that itself is the abstract idea and merely invoke processes and machinery.'"). It does not  
20 merely focus on an abstract idea like improving an HVAC automated setpoint or the generic use of  
21 computers or processors.

22                 The '597 specification confirms that claim 1 is not directed to an abstract idea. It explains  
23 that existing thermostats "d[id] not [previously] record such inputs locally, and neither recognize  
24 nor transmit the fact that a manual override has occurred." '597 patent at 5:44-47. The '597  
25 patent claims recite an invention that detects the manual changes made to the thermostat and uses  
26 that data to determine whether it should incorporate the information into long-term programming.  
27 The Court concludes that this is a specific enough solution to make concrete the asserted  
28 technological improvement in HVAC system operation. *See Koninklijke KPN N.V.*, 942 F.3d at

1 1152.

2 Because claim 1 of the '597 patent is not directed to an abstract idea at step one, the Court  
3 need not reach *Alice* step two. *See Core Wireless Licensing*, 880 F.3d at 1363.

4 **ii. Claim 9 of the '597 Patent**

5 Where claim 1 recites a method for "detecting manual changes to the setpoint," claim 9  
6 recites a method for "incorporating manual changes to the setpoint":

7 9. A method for incorporating manual changes to the setpoint for a  
8 thermostatic controller, the method comprising:

9 providing a thermostatic controller operatively connected to a  
10 heating ventilation and air conditioning system, the  
temperature set point of the heating ventilation and air  
conditioning system being manually changeable;

11 accessing stored data comprising a plurality of internal  
12 temperature measurements taken within a structure and a  
plurality of outside temperature measurements;

13 using the stored data to predict changes in temperatures inside  
14 the structure in response to at least changes in outside  
temperatures;

15 calculating scheduled programming of setpoints in the  
16 thermostatic controller based on the predicted rate of change,  
the scheduled programming comprising at least a first  
17 automated setpoint at a first time and a second automated  
setpoint at a second time to control the heating ventilation and  
air conditioning system;

18 recording, with the thermostatic controller, actual setpoints of  
19 the heating ventilation and air condition system;

20 communicating the actual setpoints from the thermostatic  
controller to the at least one computer;

21 comparing at least one of the actual setpoints at the first time  
22 for the thermostatic controller to the first automated setpoint  
for the thermostatic controller;

23 detecting a manual change to the first automated setpoint by  
24 determining whether the at least one of the actual setpoints  
and the first automated setpoint are the same or different; and

25 changing the operation of the heating ventilation and air  
26 conditioning system by changing the second automated  
setpoint at the second time based on at least one rule for the  
27 interpretation of the manual change.

28 '597 patent at 8:56-9:21.

1        As noted above, claims 1 and 9 of the '597 patent recite slightly different limitations:  
2 while claim 1 detects manual change data and predicts inside temperature changes, claim 9  
3 "incorporat[es]" that data into the HVAC system to change its operation. The differences do not  
4 affect the Court's *Alice* step one analysis, because both claims "focus on a specific means or  
5 method that improves" [HVAC system technology] [and] are not 'directed to a result or effect that  
6 itself is the abstract idea and merely invoke generic processes and machinery.'" *CardioNet*, 955  
7 F.3d at 1368 (quoting *McRO*, 837 F.3d at 1314).

8        Because the '597 specification notes that existing thermostats did not record or recognize a  
9 manual change to the thermostat, and because the specification as a whole recites a specific  
10 invention that uses manual change data to determine whether it should incorporate certain  
11 information into a thermostat's long-term programming, the Court concludes that claim 9 of the  
12 '597 patent is not directed to an abstract idea.

13        Accordingly, claim 9 of the '597 patent is not directed to an abstract idea at step one and  
14 the Court need not reach *Alice* step two. *See Core Wireless Licensing*, 880 F.3d at 1363.

15              **iii.      Claim 17 of the '597 Patent**

16        Claim 17, the last independent claim of the '597 patent, recites the following apparatus:

17        17. An apparatus for detecting manual changes to one or more  
18 setpoints for a thermostatic controller, the apparatus comprising:

19              a programmable communicating thermostat operatively  
20 connected to a heating ventilation and air conditioning system,  
21 the temperature set point of the heating ventilation and air  
22 conditioning system being manually changeable;

23              at least an electronic storage medium comprising stored data  
24 of a plurality of internal temperature measurements taken  
25 within a structure and a plurality of outside temperature  
26 measurements;

27              computer hardware configured to communicate with the  
28 electronic storage medium and with the programmable  
communicating thermostat, the computer hardware  
configured to use the stored data to predict a rate of change of  
temperatures inside the structure in response to changes in  
outside temperatures;

the computer hardware further configured to calculate a  
scheduled setpoint programming of the programmable  
communicating thermostat for one or more times to control

the heating ventilation and air conditioning system based on the predicted rate of change, the scheduled programming comprising one or more automated setpoints;

wherein the programmable communicating thermostat records actual setpoints of the heating ventilation and air condition system;

wherein the computer hardware is further configured to store in the electronic storage medium, the one or more automated setpoints associated with the scheduled programming for the programmable communicating thermostat;

wherein the programmable communicating thermostat records actual setpoints of the heating ventilation and air condition system;

wherein the computer hardware is further configured to obtain the actual setpoints from the programmable communicating thermostat and store the actual setpoints in the electronic storage medium;

wherein the computer hardware is further configured to compare the one or more automated setpoints associated with the scheduled setpoint programming with at least one of the actual setpoints; and

wherein the computer hardware is further configured to detect a manual change to the one or more automated setpoints by determining whether the at least one of the actual setpoints and the one or more automated setpoints are the same or different based on the difference value.

*Id.* at 9:40-10:34.

The Court concludes that Claim 17 is directed not to an abstract idea but to an HVAC system configured to detect manual changes to the automated setpoints and determine whether to change those automated setpoints based on those manual changes. For the same reasons discussed with respect to claims 1 and 9 of the '597 patent, the '597 patent written description reinforces the Court's conclusion that claim 17 recites a specific method to improve the function of the HVAC thermostat and is not directed to a result or effect that is the abstract idea itself.

Accordingly, because claim 17 of the '597 patent is not directed to an abstract idea at step one, the Court need not reach *Alice* step two. *See Core Wireless Licensing*, 880 F.3d at 1363.

## D. The '890 Patent

The '890 patent is titled "System and method for using a mobile electronic device to optimize an energy management system." See '890 patent. It claims a system "for using the

1 geographic location of networked consumer electronics devices as indications of occupancy of a  
2 structure for purposes of automatically adjusting the temperature setpoint on a thermostatic HVAC  
3 control.” *Id.* at Abstract. Claim 1 is the ’890 patent’s sole independent claim and recites:

4 1. A thermostat system comprising:

5 a housing;

6 electrical contacts configured to connect the thermostat with  
7 wires that allow for at least two electrical connections from a  
building’s HVAC system to the contacts;

8 a display configured to present information to a user;

9 a wireless radio compatible with a wireless radio frequency  
10 protocol and configured to communicate bi-directionally with  
a location-aware mobile device;

11 a temperature sensor;

12 one or more processors configured with electronic circuitry to:

13 receive HVAC data parameters, including a first data  
14 parameter from the temperature sensor comprising an  
interior temperature inside the building; and

15 a second data parameter from a network connected to  
the thermostat, wherein the second data parameter  
comprises an outside weather condition collected from  
a source external to the building;

16 determine a first temperature setpoint data parameter  
for the building, wherein the first setpoint data  
parameter includes a first temperature value and a first  
time value;

17 determine a second temperature setpoint data parameter  
for the building, wherein the second setpoint data parameter includes a second temperature  
value and a second time value;

18 receive radio frequency signals from the location-  
aware mobile device;

19 receive geo-positioning data from the location-aware  
mobile device and automatically adjust a temperature  
value based on the geo-positioning data, including  
initiating at least one cooling or heating cycle for the  
HVAC system when the geo-positioning data is  
determined to indicate that the building is unoccupied  
by the user;

20 electronic circuitry configured to allow the user to adjust a

desired temperature for the HVAC system;

electronic circuitry configured to analyze a plurality of data parameters specific to the user, including at least one data parameter relating to usage of the HVAC system at various times; and

electronic circuitry configured to generate and communicate usage metrics pertaining to the HVAC system over time; and

a compressor delay circuit configured to delay the start or stop of a compressor for the HVAC system and protect the compressor from rapid cycling.

*Id.* at 33:29-34:10. The parties agree that claim 1 of the '890 patent is representative of the '890 patent for purposes of the Court's § 101 analysis. *See Berkheimer*, 881 F.3d at 1365.

The Court finds that claim 1 of the '890 patent is directed to an HVAC system that uses geo-positioning data from location-aware mobile devices to determine if a building is occupied and readjust the system's temperature as needed. While Google characterizes the '890 patent as nothing more than the mere automation of turning an HVAC system on or off depending on whether an occupant is home, this again oversimplifies the claims. *See McRO*, 837 F.3d at 1313 (“Courts must be careful to avoid oversimplifying the claims by looking at them generally and failing to account for the specific requirements of the claims.” (quotation marks and quotation omitted)). The '890 patent focuses on the new and useful feature of controlling a home’s HVAC thermostat by detecting whether an occupant is home based on mobile device location data.

The ’890 patent’s claimed advance makes clear that its claims are not directed to an abstract idea. *See Ancora Techs.*, 908 F.3d at 1347 (“We examine the patent’s ‘claimed advance’ to determine whether the claims are directed to an abstract idea.” (quotation omitted)). The ’890 patent specification identifies the growing desire to increase energy efficiency amid rising energy prices. *See* ’890 patent at 2:19-39. This trend included the hospitality industry, where HVAC systems in hotel rooms were often left operating while the rooms were unoccupied, wasting considerable energy. *Id.* at 2:40-47. To address this problem, hotels began incorporating motion sensors into their HVAC systems to turn the system off if the sensor did not detect any motion after a predetermined interval. *Id.* at 56-64. However, “the systems used in hotels do not easily transfer to the single-family residential HVAC systems” due to the size and functional differences

1 between the average hotel room and the average home. *Id.* at 3:1-8. As the '890 patent  
2 specification explains, while a hotel room tends "to be small enough that a single motion sensor is  
3 sufficient to determine with a high degree of accuracy whether or not the room is occupied," "[a]  
4 single motion sensor in the average home today would have limited value because there are likely  
5 to be many places one or more people could be home and active yet invisible to the motion  
6 sensor." *Id.* And though "[t]he most economical way to include a motion sensor in a traditional  
7 programmable thermostat would be to build it into the thermostat itself," because "thermostats are  
8 generally located in hallways," they were "unlikely to be exposed to the areas where people tend  
9 to spend their time." *Id.* at 3:8-20.

10 To more accurately detect whether an occupant is home, the '890 patent uses a "significant  
11 new technology" incorporated into mobile devices – "the ability to geolocate the device," *id.* at  
12 3:37-40 – and claims an HVAC system configured to receive mobile device geolocation data  
13 signals to detect and predict occupancy and adjust the HVAC system accordingly. Accordingly,  
14 EcoFactor's invention solves the problem of managing energy consumption in a home based on  
15 mobile device location signals. Such an invention is directed a non-abstract idea and thus patent-  
16 eligible.

17 Because the '890 patent is not directed to an abstract idea at step one, the Court need not  
18 reach *Alice* step two. See *Core Wireless Licensing*, 880 F.3d at 1363.

19 **IV. CONCLUSION**

20 The Court **DENIES** Google's motion for judgment on the pleadings.

21 **IT IS SO ORDERED.**

22 Dated: 5/6/2022

23   
24 HAYWOOD S. GILLIAM, JR.  
United States District Judge